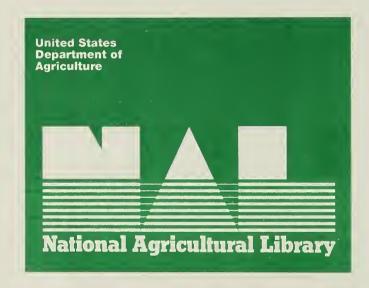
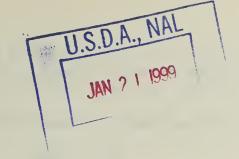
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aTP372 .6 .U563339 1974







UNITED STATES STANDARDS

for grades of

FROZEN ASPARAGUS

Fourth Issue As Amended

EFFECTIVE JUNE 30, 1974

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL MARKETING SERVICE

FRUIT AND VEGETABLE DIVISION

PROCESSED PRODUCTS STANDARDIZATION AND INSPECTION BRANCH

These standards supersede the standards which have been in effect since April 8, 1970

This is the fourth issue, as amended, of the United States Standards for Grades of Frozen Asparagus. The amendment was published in the Federal Register of May 15, 1974 (39 F.R. 17303) to become effective June 30, 1974.

Previous issues of these standards were:

First Issue:
Second Issue:
Third Issue:
Fourth Issue:
Amended:

Effective April 1, 1942 Effective April 15, 1944 Effective April 18, 1952 Effective December 31, 1969 Effective April 8, 1970

These standards are included in the Code of Federal Regulations, Title 7 -- Agriculture, Part 52.

Issued under the authority of the Agricultural Marketing Act of 1946, which provides for the development of official U.S. grades to designate different levels of quality, the grade standards are for the voluntary use of producers, suppliers, buyers, and consumers. As in the case of other standards for grades of processed fruits and vegetables, these standards are designed to facilitate orderly marketing by providing a convenient basis for buying and selling, for establishing quality control programs, and for determining loan values.

These standards will also serve as a basis for the inspection and grading of this commodity by the Federal inspection service, which is also provided under the Agricultural Marketing Act of 1946. This service, available for inspection and grading of other processed products as well, is offered to interested parties, upon application, on a fee-for-service basis.

These standards are issued by the Department after careful consideration of all data and views submitted, and the Department welcomes suggestions which might aid in improving the standards in future revisions. Comments may be submitted to, and copies of standards obtained from:

Chief, Processed Products Standardization and Inspection Branch Fruit and Vegetable Division, AMS U.S. Department of Agriculture Washington, D.C. 20250

UNITED STATES STANDARDS FOR GRADES OF

FROZEN ASPARAGUS

EFFECTIVE JUNE 30, 1974

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- 52.381 Product description.
- 52.382 Types.
- 52.383 Styles.
- 52.384 Definitions of terms.
- 52.385 Sample unit size.
- 52.386 Size of frozen asparagus.
- 52.387 Size classification and compliance.
- 52.388 Grades.
- 52.389 Factors of quality and grade compliance.
- 52.390 Sample size.
- 52.391 Lot acceptance for size.
- 52.392 Lot acceptance for "percent head material" in the style of cut-spears.
- 52.393 Lot acceptance for "percent loose material".
- 52.394 Lot acceptance for quality.
- 52.395 Tally Sheet.

Authority: The provisions of this subpart issued under Sec. 205, 60 Stat. 1090, as amended; 7 U.S.C. 1624.

NOTE: Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act or with applicable State laws and regulations.

§52.381 PRODUCT DESCRIPTION.

Frozen asparagus consists of sound and succulent fresh shoots of the asparagus plant (Asparagus officianalis). The product is prepared by sorting, trimming, washing, and blanching as necessary to assure a clean and wholesome product. It is then frozen and stored at temperatures necessary for preservation.

§52.382 TYPES.

- (a) "Green" or "all-green" consists of units of frozen asparagus which are typical green, light-green, or purplish-green in color.
- (b) "Green-white" consists of frozen asparagus spears and tips which have typical green, light-green, or purplish-green color to some extent but which are white in the lower portions of stalk.

§52.383 STYLES.

- (a) "Spears" or "stalks" style consists of units composed of the head and adjoining portion of the shoot that are 3 inches or more in length.
- (b) "Tips" style consists of units composed of the head and adjoining portion of the shoot that are less than 3 inches in length.
- (c) "Cut spears" or "cuts and tips" style consists of the head and portions of the shoot cut transversely into units 2 inches or less but not less than one-half inch in length. To be considered of this style head material shall be present in these amounts for the respective lengths of cuts:
- (1) 1-1/4 inches or less. Not less than 18 percent (average), by count, of all cuts are head material.
- (2) Longer than 1-1/4 inches. Not less than 25 percent (average), by count, of all cuts are head material.
- (d) "Center cuts" or "cuts" style consists of portions of shoots (with or without head material) that are cut transversely into units not less than one-half inch in length and that fail to meet the definition for "cut spears" or "cuts and tips" style.

- § 52.384 DEFINITIONS OF TERMS.
- (a) Absolute limit (AL). Limit for maximum number of defects permitted in a sample unit.
- (b) Acceptable Quality Level (AQL): Acceptable Quality Level (AQL) is the maximum percent defective, or the maximum number of defects per hundred units, that, for purposes of sampling inspection, can be considered satisfactory as a process average.
- (c) Defects. Any specifically defined variation from a particular requirement. Defects are classified as "minor", "major", "severe", or "critical".
 - (d) Head. In "cut spears" or "cuts and tips" style means:
 - (1) A tip end which is three-eighths inch or more in length; or
- (2) An upper portion of a shoot which possesses a substantial amount of compact head material.
- (e) Sample. The number of sample units to be used for inspection of the lot.
- (f) Sample unit. The amount of product specified to be used for inspection. It may be:
 - (1) The entire contents of a container; or
 - (2) A portion of the contents of a container; or
 - (3) A combination of the contents of two or more containers; or
 - (4) A portion of unpackaged product.
- (g) Unit. The term "unit", unless otherwise qualified, means any individual portion of an asparagus shoot three-eighths inch or more in length.
- (h) Loose material. "Loose material" means any loose or shattered asparagus material and cut or broken pieces that are less than three-eighths inch in length.

§52.385 SAMPLE UNIT SIZE.

Compliance with requirements for factors of quality is based on the following sample unit size for the respective style of pack:

- (a) Spears; tips 50 spears or 50 tips.
- (b) Cut spears; cuts and tips; center cuts and cuts 100 units.

The size of frozen asparagus in "spears" or "tips" styles is determined by measuring the longest dimension at right angles to the longitudinal axis of the unit at the largest diameter of the unit. The word and number designations of the various sizes of frozen asparagus are shown in Table I.

TABLE I
SIZES OF FROZEN ASPARAGUS SPEARS AND TIPS

Word designation	Number designation	Diameter in inches
Small	1	Less than 3/8 inch.
Medium	2	3/8 inch or larger but less than 5/8 inch.
Large (Jumbo)	3	5/8 inch or larger but less than 7/8 inch.
Extra Large (Colossal).	4	7/8 inch or larger.
Blend of sizes	sizes which d criteria for	ot more than three adjacent does not meet the acceptance a single size but meets the blend of sizes (Table II and
Mixture of sizes	Fails to meet size or blend	the requirements of a single do of sizes.

§52.387 SIZE CLASSIFICATION AND COMPLIANCE.

Frozen asparagus in "spears" and "tips" styles are considered as meeting the designated single size or blend of sizes, if they meet the criteria specified in Tables II and III. Defects are classified as minor, major, and severe. Each "X" mark in Table II represents "one (1) defect".

TABLE II CLASSIFICATION OF SIZE DEFECTS

	ę	Classification
Size classification	Detects	Minor Major Severe
Single sizes:		
Small	Medium size	
	Large size	×
	Extra-Large size	X
Medium	Small size	×
	Large size	
	Extra-Large size	X
Large	Small size	X
	Medium size	×
	Extra-Large size	X X
Extra-Large	Small size	X
	Medium size	×
	Large size	
Blends of sizes:		
Small/Medium Blend	Large size	
	Extra-Large size	
Medium/Large Blend	Small size	X
	Extra-Large size	X
Large/Extra-Large Blend	Small size	
	Medium size	
Small/Medium/Large Blend	Extra-Large size	X
Medium/Large/Entra-Large Blend	Small size	X X

TABLE III
TOLERANCES FOR SIZE COMPLIANCE

		Si	ngle Siz	es	Blends o	f Sizes
Acceptable Quality Level (AQL)		15.0	8.0	2.5	8.0	
Absolute Limit (AL) $1/$		15	10	5	10	
Number of Sample Units	Number of Spears or Tips	<u>2</u> / Total	Major	Severe	<u>3</u> / Minor or	Total
			In ti	he total s	sample	-
1	50	12	7	3	7	
2	100	21	13	5	13	
3	150	30	18	7	18	
4	200	39	22	^9	22	
5	250	47	27	10	27	
6	300	55	32	12	32	
7	350	63	36	14	36	
8	400	72	41	15	41	
9	450	80	45	17	45	
10	500	90	50	18	50	
11	550	96	54	20	54	
12	600	104	59	21	59	
13	650	112	63	23	63	
14	700	121	68	24	68	
15	750	129	72	26	72	
16	800	140	76	27	76	
17	850	145	81	29	81	
18	900	153	85	30	85	
19	950					
20		161	90	32	90	
	1000	169	94	33	94	
21	1050	177	98	35	98	

 $[\]underline{1}$ / In any sample unit, when order of production is known, except the first one of 50 spears or tips.

^{2/ &}quot;Total" equals" "minor", plus "major", plus "severe", as applicable.

 $[\]underline{3}/$ In "Blends of Sizes", "minor", and "total"defects are the same.

§52.388 GRADES.

- (a) "U.S. Grade A" (or "U.S. Fancy") is the quality of frozen asparagus that:
 - (1) is of similar varietal characteristics;
 - (2) has a good flavor and odor;
- (3) has no grit or silt present that affects the appearance or edibility of the product;
- (4) in which no more than 5 percent, by weight, of loose material may be present; and
- (5) has an attractive appearance and eating quality within the limits specified for the various quality factors.
- (b) "U.S. Grade B" (or "U.S. Extra Standard") is the quality of frozen asparagus that:
 - (1) is of similar varietal characteristics;
 - (2) has a good flavor and odor;
- (3) has no more than a trace of grit or silt present that slightly affects the appearance or edibility of the product;
- (4) in which no more than 10 percent, by weight, of loose material may be present; and
- (5) has a reasonably attractive appearance and eating quality within the limits specified for the various quality factors.
- (c) "Substandard" is the quality of frozen asparagus that fails to meet the requirements of U.S. Grade B.
- §52.389 FACTORS OF QUALITY AND GRADE COMPLIANCE.
- (a) The grade of a lot of frozen asparagus is based on compliance with requirements for the following quality factors:
 - (1) Color (Table IV);
 - (2) Uniformity of lengths (Table IV);

- (3) Character (Table V);
- (4) Damage (Table V); and
- (5) Harmless extraneous vegetable material (Table VI).
- (b) Defects are classified as minor, major, severe, or critical. Each "X" mark in Table IV, V, and VI represents "one (1) defect".

TABLE IV

CLASSIFICATION OF DEFECTS

Color -- Length

Classification	Minor Major Severe	X	X	 	 	 - - - - -	 - - - - - -	 - - - - -	
Defects -		Green or all-green spears or tips: White or yellowish-white color exceeding $1/4$ inch up to $1/3$ the length of the stalk	White or yellowish-white color over $1/3$ the length of the stalk	Green-white speams or tips: White or yellowishwhite color exceeding 1/3 the length of the stalk	All types: Cut Spears; Cuts and tips; Cuts; Center Cuts styles: White or yellowish-white; or partially of such color-	Spears; Tips styles: Any unit which varies more than $1-1/2$ inches from the predominant length of the sample unit	Cut Spears; Cuts and Tips; Cuts; Center Cuts styles: Any unit of cut asparagus less than 1/2 inch in length (excluding head material or loose material)	Any unit of cut asparagus, more than 2 inches in length	
Onality Factors		Color	•			Uniformity of length -			

CLASSIFICATION OF DEFECTS

Character - Damage

Classification Minor Major Severe	
DEFECTS	- Spears and Tips styles: In Grade A only - Reasonably well developed (worse than Plate 1 but not worse than Plate 2 or 3). In all grades - Poorly developed (worse than Plate 2 or 3): Seedy
Quality factors	Character

For interpretative guides, see USDA illustrations of "Stages of Development in Frozen Asparagus", which area part of this document.

TABLE VI

CLASSIFICATION OF DEFECTS

Extraneous material

Quality factors	DHELOEC		Clas	sificati	ion
	DEFECTS	Minor	Major	Severe	Critical
Harmless extraneous vegetable material.	Grass, weeds, leaves, stems, and dried stalks: 1 inch or less More than 1 inch but not more than 2 inches - More than 2 inches but not more than 3 inches More than 3 inches				x

STAGES OF DEVELOPMENT IN FROZEN ASPARAGUS



PLATE 1

SPEARS SHOW LOWER LIMIT FOR WELL DEVELOPED HEADS

STAGES OF DEVELOPMENT IN FROZEN ASPARAGUS



SPEARS SHOW LOWER LIMIT FOR REASONABLY WELL DEVELOPED HEADS

STAGES OF DEVELOPMENT IN FROZEN ASPARAGUS

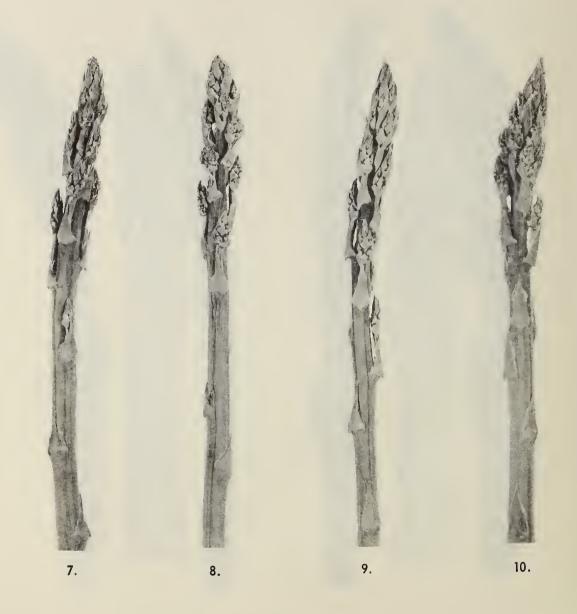


PLATE 3

SPEARS SHOW LOWER LIMIT FOR REASONABLY WELL DEVELOPED HEADS

TABLE VII
GRADE COMPLIANCE - SPEARS AND TIPS
Maximum Defects Permitted

3	0.65	2	Critical	1	1	2	က	٣	7	7	5	5	9	9	7	7	œ	œ	6	6	6	10	10	11	111
U.S. Grade B	6.5	80	Severe	the total sample	9	11	15	19	23	27	30	34	38	42	45	67	53	95	09	99	29	71.	74	78	81
U,	12.5	13	Major	In the tot	10	18	25	33	07	47	54	61	89	92	81	88	95	102	108	117	122	129	136	142	149
	28.0	25	$\frac{2}{\text{Total}}$	I	20	37	53	89	84	66	114	130	145	159	175	190	204	219	234	249	264	278	293	308	322
	0	0	Critical	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
U.S. Grade A	2.5	5	Severe	01	m	2	7	6	10	12	14	15	17	18	20	21	23	24	26	27	29	30	32	33	35
U.S. C	6,5	80	Major	In the tot	9	11	15	19	23	27	30	34	38	42	45	67	53	56	09	79	29	71	74	78	81
	15.0	15	$\frac{2}{\text{Total}}$		12	21	30	39	47	55	63	72	80	06	, 96	104	112	121	129	140	145	153	161	169	177
			Number of Spears or Tips		50	100	150	200	250	300	350	400	450	200	550	009	650	700	750	800	850	006	950	1000	1050
	Acceptable Quality Level (AQL)	Absolute Limit (AL) $1/$	Number of Sample Units		1	2	3	7	5	9	7	∞	6	10	, 11	12	13	14	15	16	17	18	19	20	21

In any sample unit, when the order of production is known, except the first one of 50 spears or tips. 131

2/ "Total" equals "minor" plus "major" plus "severe" plus "critical", as applicable.

TABLE VIII

GRADE COMPLIANCE - CUT SPEARS AND CUTS

MAXIMUM Defects Permitted

	0.65	က	Critical	ple	2	Э	4	5	9	7	80	6	10	11	12	12	13	14	15	16	17	17	18	19	20
Grade B	6.5	14	Severe	In the total sample	11	19	27	34	42	67	56	99	7.1	78	85	92	66	106	113	120	127	134	141	148	155
U.S. Grad	12.5	22	Major	1	18	33	47	61	9/	88	102	117	129	142	156	169	182	195	209	222	235	248	261	274	287
	28.0	77	$\frac{2}{\text{Total}}$	1	37	89	66	130	160	190	219	249	278	308	337	366	396	425	454	483	512	541	570	599	628
	0	0	Critical	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2.5	7	Severe	the total sample -	5	6	12	15	18	21	24	27	30	33	36	39	42	45	47	50	53	56	59	62	99
S, Grade A	6.5	14	Major	In the to	11	19	27	34	42	64	56	99	71	78	85	92	66	106	113	120	127	134	141	148	155
U.S.	15.0	25	$\frac{2}{\text{Total}}$		21	39	55	72	06	104	121	140	153	169	185	200	216	232	248	264	279	295	311	326	342
			Number of Cuts		100	200	300	400	200	009	700	800	006	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
	Acceptable Quality Level (AQL)	Absolute Limit (AL) $1/$	Number of Sample Units		П	2	3	4	5	9	7	∞	6	10	11	12	13	14	15	16	17	18	19	20	21

In any sample unit, when the order of production is known, except the first one of 100 cuts. 1/

"Total" equals "minor" plus "major" plus "severe" plus "critical", as applicable. 77

§ 52.390 SAMPLE SIZE.

- (a) General. The sample size to determine compliance with requirements for size, percent head material, and quality factors shall be the sampling plans specified in the "Regulations Governing Inspection of Processed Fruits and Vegetables and Related Products" (§§ 52.1-52.83).
- (b) Acceptance numbers. The acceptance numbers for deviants specified in the sampling plans cited in paragraph (a) of this section do not apply to these standards.

§52.391 LOT ACCEPTANCE FOR SIZE.

A lot of frozen asparagus is considered as meeting the requirements for a specified size if the defects permitted and the AL values for the applicable defect classifications, specified in Table III, are not exceeded.

§52.392 LOT ACCEPTANCE FOR "PERCENT HEAD MATERIAL" IN THE STYLE OF CUT-SPEARS.

The percent, by count, of heads is determined by averaging the percentage of heads in all of the sample units comprising the sample, *Provided*, That;

- (α) When cut into units 1-1/4 inches or less in length no individual sample unit may contain less than 12 percent, by count, of heads; and
- (b) When cut into units longer than 1-1/4 inches, no sample unit may contain less than 15 percent, by count, of heads.

\$52.393 LOT ACCEPTANCE FOR "PERCENT LOOSE MATERIAL".

The percent of loose material, by weight, is determined by averaging the percentages by weight of loose material in the total weight of all of the sample units comprising the sample.

§52.394 LOT ACCEPTANCE FOR QUALITY.

A lot of frozen asparagus is considered as meeting the quality requirements of either U.S. Grade A or U.S. Grade B if:

- (a) The product has a good flavor and odor; and
- (b) The product is free of grit or silt that affects the appearance or edibility within the limits specified for either U.S. Grade A or U.S. Grade B; and

- (c) The product complies with the limits specified for loose material for either U.S. Grade A or U.S. Grade B; and
- (d) The defects permitted and the AL values for the applicable defect classifications, specified in Table VII and VIII, are not exceeded.

LENGTH OF CUT					6	Maj. Se. Crit.			ilkin gi									3												
					8	Maj. Se- Crit. Min.																								
INSPECTOR						Crit. Min.																								
CUT SPEARS					7	Min. Maj. Se-																								
SPEARS CODE					9	Maj. Se- Crit.																								
					5	Ser Crit. Min.							r jje 9. uanda			11111								illi (
						Crit. Min. Maj.																								
					4	Min. Maj. Se-																								
						- Maj. Se. Crit.																		niciui						
2					2	Se- Crit. Min																								
ASION ZEN ASPARAGU					-	Crit. Min. Moj.																								
AGRICULTURAL MANKETING SERVICE FRUIT AND VEGETABLE DIVISION ILLY SHEET FOR FROZEN AS	ox.				-	Min. Maj. Se-		ė										P												
FECT 1/	NO., SIZE AND KIND OF CONTAINER		R MARK		Sample Unit No.	DEFECT	White or yellowish-white	MITY Varies > 1-1/2 in.		Shattered heads	Missbapened	Poorly cut	GE Discolored	Mechanical	Pathological	Other	HARMLESS EXTRANEOUS MATERIAL	Reasonably well developed	rioer	sch class)	CUMULATIVE TOTAL (Each class)	'I closses)	CUMULATIVE TOTAL (All closses)	***************************************	CUMULATIVE TOTAL (Foch closs)	I closses)	CUMULATIVE TOTAL (All closses)	MATERIAL	PERCENT HEAD MATERIAL	ND ODOR
(6-3-74)	NO., SIZE	LABEL	CONTAINER MARK	NET WEIGHT			COLOR	UNIFORMITY	LENGTH				- 1	.9 -	-		HARMLESS	CHARACT' R		TOTAL (Each class)	CUMULATI	TOTAL (All closses)	CUMULATIV	SIZE (Diameter)	CUMULATIN	TOTAL (All closses)	CUMULATIN	% LOOSE MATERIAL	PERCENT	FLAVOR AND ODOR

